



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Smith et al.

Appl. No. 10/765,223

Filed: January 26, 2004

For: REFERENCE WAFER AND
PROCESS FOR
MANUFACTURING SAME

Art Unit: 1756

Examiner: Young, Christopher G.

hereby certify that this correspondence and the attached papers are being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated below in an envelope addressed to:

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P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In accordance with the duty of disclosure imposed by 37 C.F.R. § 1.56 to inform the Office of all references known by Applicant or Applicant's representative that may be material to the examination of the subject application, Applicant's representative hereby provides this Information Disclosure Statement that is prepared in accordance with 37 C.F.R. §§ 1.97-1.98. Form PTO/SB/08 (8 pages) and a copy of the cited non patent literature is provided herewith in connection with the above-captioned application. The cited references that comprise issued U.S. patents are not attached, per the Notice of waiver published in the Official Gazette on August 5, 2003.

Although these documents and information are made known to the Patent and Trademark Office in compliance with Applicants' duty of disclosure, such disclosure is not to be construed as an admission by Applicants or Applicants' representative that any of the references, singly or in any combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. § 1.97(h), the filing of this Information Disclosure Statement shall not be construed to mean that a search has

Applicant: McArthur et al
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been made or that no other material information as defined in 37 C.F.R. § 1.56(b) exists.

Applicants respectfully request that the Examiner review the foregoing references and request that they be made of record in the file history of the above-captioned application.

A check in the amount of \$180.00 is enclosed as required under 37 CFR 1.17(p). The Commissioner is hereby authorized to charge any fee, including any submitted herewith if the attached check(s) is in the wrong amount or otherwise improper or missing, that may be due in connection with this and the attached papers, or with this application during its entire pendency to or to credit any overpayment to Deposit Account No. 50-1213. A duplicate of this sheet is enclosed.

Respectfully submitted,
HELLER EHRMAN LLP

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SD 809146 v1(38203.6081)



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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 1

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US-4,757,207	07/1988	Chappelow et al	
		US-4,861,148	08/1989	Sato et al	
		US-4,929,083	05/1990	Brunner	
		US-5,124,927	06/1992	Hopewell et al	
		US-5,262,257	11/1993	Fukuda et al	
		US-5,285,236	02/1994	Jain	
		US-5,438,413	08/1995	Mazor et al	
		US-5,444,538	08/1995	Pellegrini	
		US-5,477,058	12/1995	Sato	
		US-5,700,602	12/1997	Dao et al	
		US-5,757,507	05/1998	Ausschnitt et al	
		US-5,805,290	09/1998	Ausschnitt et al	
		US-5,824,441	10/1998	Farrow et al	
		US-5,877,861	03/1999	Ausschnitt et al	
		US-5,953,128	09/1999	Ausschnitt et al	
		US-6,023,338	02/2000	Bareket	
		US-6,064,486	05/2000	Chen et al	
		US-6,079,256	06/2000	Bareket	

FOREIGN PATENT DOCUMENTS

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Complete if Known

Application Number	10/765,223
Filing Date	01/26/2004
First Named Inventor	Smith et al
Art Unit	1756
Examiner Name	C. Young

Attorney Docket Number 38203-6081B

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		US- 6,130,750	10/2000	Ausschnitt et al	
		US- 6,137,578	10/2000	Ausschnitt	
		US- 6,142,641	11/2000	Cohen et al	
		US- 6,143,621	11/2000	Tzeng et al	
		US- 6,153,886	11/2000	Hagiwara et al	
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		US- 6,204,912	03/2001	Tsuchiya et al	
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		US- 6,737,207	05/2004	Imai	
		US- 4,861,148	08/1989	Sato et al	
		US- 6,573,986	06/2003	Smith et al	
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		US- 6,906,303	06/2005	Smith	
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		US- 2005/0240895	10/2005	Smith et al	
		US- 5,402,224	03/1995	Hirukawa et al	

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Art Unit	1756
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Attorney Docket Number	38203-6081B

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Sheet 4

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8

Complete if Known	
Application Number	10/765,223
Filing Date	01/26/2004
First Named Inventor	Smith et al
Art Unit	1756
Examiner Name	C. Young

Attorney Docket Number 38203-6081B

NON PATENT LITERATURE DOCUMENTS

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		Armitage et al, Analysis of overlay distortion patterns, SPIE Vol. 921, 207:221, 1988	
		Biesterbos et al., A New Lens for Submicron Lithography and its Consequences for Wafer Stepper Design, SPIE Vol. 633, Optical Microlithography V, 34:43, 1986	
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		Bruning, Optical Lithography – Thirty Years and Three Orders of Magnitude, SPIE Vol. 3051, 14:27, 1997	
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		Dooly et al, Stepper Matching for Optimum Line Performance, SPIE Vol. 3051, 426:432, 1997	
		Goodwin et al, Characterizing Overlay Registration of Concentric 5X and 1X Stepper Exposure Fields Using Interfield Data, SPIE Vol. 3050, 407:417, 1997	
		Goodwin et al., Expanding Capabilities in Existing Fabs with Lithography Tool-Matching, Solid State Technology, 97:106, June 2000	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5

of 8

Complete if Known	
Application Number	10/765,223
Filing Date	01/26/2004
First Named Inventor	Smith et al
Art Unit	1756
Examiner Name	C. Young

Attorney Docket Number 38203-6081B

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		Handbook of Microlithography, Micromachining and Microfabrication, Book: Vol. 1, "Microlithography", Rai-Choudhury, P. (Ed.), SPIE Optical Engineering Press, SPIE, Bellingham, Washington, pp. 417-418 (1997)	
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		Kodama et al., Measuring System XY-5I, K. SPIE Vol. 2439, 144:155, 1995	
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		Lin, "The Attenuated Phase-Shifting Mask", Solid State Technology, Special Series/Advanced Lithography, 35(1): 43-47 (1992)	
		MacMillan et al, "Analysis of Image Field Placement Deviations of a 5X Microlithographic Reduction Lens", SPIE, 334:78-89 (1982)	
		Martin et al, Measuring Fab Overlay Programs, SPIE Conference on Metrology, Inspection, and Process Control for Microlithography XIII, 64:71, March 1999	

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		Filing Date	01/26/2004	
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Sheet	6	of	8	Attorney Docket Number
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		McFadden, C. et al, A Computer Aided Engineering Workstation for Registration Control, SPIE Vol. 1087, 255:266, 1989		
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		Press et al., Numerical Recipes, The Art of Scientific Computing, Cambridge University Press, 509:520, 1990.		
		Progler et al., Method to Budget and Optimize Total Device Overlay, SPIE Vol. 3679, 193:207, 1999		

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		Quaestor Q7, "Fully Automated Optical Metrology System for Advanced IC Production", Quaestor Q7 Product Specification, BIO-RAD 2 pages	
		Raugh, "Error Estimation for Lattice Methods of State Self-Calibration", SPIE, 3050:614-625 1997	
		Starikov et al., Accuracy of Overlay Measurements: Tool and Mark Asymmetry Effects, Optical Engineering, 1298:1309, 1992	
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		Sullivan, "Semiconductor Pattern Overlay", Proc. of SPIE Critical Reviews, Vol. CR52, pp. 160-188; 1997	
		Takac et al, "Self-Calibration in Two-Dimensions: The Experiment", SPIE, 2725:130-146 1996	
		M. van den Brink et al, Direct-Referencing Automatic Two-Points Reticle-to-Wafer Alignment Using a Projection Column Servo System, SPIE Vol. 633, Optical Microlithography V, 60:71, 1986	
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Examiner Signature		Date Considered
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		van den Brink et al, New 0.54 Aperture I-Line Wafer Stepper with Field by Field Leveling Combined with Global Alignment, SPIE Vol. 1463, 709:724, 1991		
		van den Brink et al., Step and Scan and Step and Repeat, a Technology Comparison, SPIE Vol. 2726, 734:753		
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